

CLAIMS:

1. A device for detecting a structure, to be applied to a substrate, comprising:
  - an illumination module;
  - a sensor unit, the sensor unit being provided on a device that applies the structure to the substrate, the sensor unit obtaining an image of an area of the substrate; and
  - an analytical unit placing a set of calipers over a set of data determined from the image, whereby the calipers extend at a non-parallel angle to a track upon the substrate, the image illustrating structure through a brightness profile of gray values along the calipers, the analytic unit performing structure determination according to at least one of the following criteria:
    - a. Level of edge contrast;
    - b. Width of structure;
    - c. Difference between set vs actual position;
    - d. Difference between set vs actual width of the structure;
    - e. Difference between set vs actual brightness of the structure; and
    - f. Difference between set vs actual brightness of the background.
2. The device according to Claim 1, wherein the sensor unit is positioned directly at the exit of the facility for the application of the structure.
3. The device according to Claim 1 wherein the sensor unit comprises a video-sensor which records one and/or several picture lines.
4. The device according to Claim 1 wherein the illumination module contains a white light illumination module.
5. The device according to Claim 1 wherein the illumination module is an LED illumination module radiating the spectral ranges, red, blue, green, infrared and/or ultraviolet.
6. The device according to Claim 1 further comprising multiple illumination modules.

7. The device according to Claim 1 wherein the analytical unit is provided within the sensor unit, whereby the quality criteria are set by means of an external control unit.
8. The device according to Claim 1 wherein the analytical unit generates a set of hypotheses for each caliper.
9. The device according to Claim 8, wherein the analytical unit links neighboring sets of hypotheses.
10. Device according to Claim 1 wherein the analytical unit performs the structure determination, in addition, according to at least one of the following criteria:
  - d. Co-linearity of the actual position;
  - f. Co-linearity of the actual width of the structure;
  - h. Co-linearity of the actual brightness of the structure; and
  - j. Co-linearity of the actual brightness of the background.
11. Device according to Claim 1 further comprising a three-dimensional display made possible by means of the position of the sensor unit and the structure determination.
12. Device according to Claim 1 further comprising a network connection that provides triggering and analysis over one of the Internet or Intranet.
13. A method for the detection of a structure applied to a substrate, comprising:
  - a) providing an illumination module and a sensor unit on the device that applies the structure to the substrate;
  - b) determining the structure during the application of the structure to the substrate, whereby the structure determination is performed by means of calipers, which extend non-parallel to a track of the substrate and structure; and

displaying a profile of the structure , and corresponding error areas; whereby the structure determination is performed by means of the analysis of the brightness profile of the gray values along the caliper according to at least one of the following criteria:

- a. Level of edge contrast
- b. Width of structure
- c. Difference between set vs actual position
- e. Difference between set vs actual width of the structure
- g. Difference between set vs actual brightness of the structure
- i. Difference between set vs actual brightness of the background

14. The method according to Claim 13, whereby the structure determination is performed with at least one illumination module being a white light module and/or an LED illumination module with different colors.

15. The method according to any one of the Claim 13 , whereby substrate data are used for structure determination and corresponding error analysis.

16. The method according to Claim 13 , whereby different error areas can be displayed separately by the visualization software.

17. The method according to Claim 13 , whereby the structure determination, in addition, is performed according to at least one of the following criteria:

- d. Co-linearity of the actual position
- f. Co-linearity of the actual width of the structure
- h. Co-linearity of the actual brightness of the structure
- j. Co-linearity of the actual brightness of the background

18. A method for the detection of an adhesive extrusion line applied comprising:

- a) Obtaining an image showing the structure to be detected;
- b) Placing support points along the structure to be detected;
- c) Connecting the support points to generate a reference line; whereby, in addition, an inspection area along the reference line is defined;

- d) Defining a range of tolerance along the reference line;
- e) Determining whether or not the structure is within the range of tolerance; and

placing a set of calipers over a set of data in the image, the structure being determined by means of the brightness profile of the gray values along the calipers.

19. The method according to Claim 18, are generated a set of hypotheses for each caliper.

20. The method according to Claim 19, wherein neighboring sets of hypotheses are linked.

21. The method according to Claim 18 , whereby the structure determination, is performed according to at least one of the following criteria:

- a. Co-linearity of the actual position,
- b. Co-linearity of the actual width of the structure,
- c. Co-linearity of the actual brightness of the structure,
- d. Co-linearity of the actual brightness of the background.

22. The method of claim 18, further comprising generating a set of hypotheses for the calipers, and linking neighboring sets of hypotheses.

23. The method of claim 18, wherein the structure determination is performed according to at least one of the following criteria:

- a. Level of edge contrast;
- b. Width of structure;
- c. Difference between set vs actual position;
- d. Difference between set vs actual width of the structure;
- e. Difference between set vs actual brightness of the structure; and
- f. Difference between set vs actual brightness of the background.